

What is claimed is:

1. An isolated polynucleotide encoding *Neisseria meningitidis* LbpB.
- 5 2. The polynucleotide of claim 1 which is the polynucleotide of SEQ ID NO: 1 (from nucleotide 100 to nucleotide 2274), SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, or SEQ ID NO:9.
3. An isolated polynucleotide comprising a nucleotide sequence that is at least
10 65% identical to that of SEQ ID NO:1 from nucleotide 100 to nucleotide 2274.
4. An isolated polynucleotide comprising a nucleotide sequence that is at least 65% identical to that of SEQ ID NO:3.
- 15 5. An isolated polynucleotide comprising a nucleotide sequence that is at least 65% identical to that of SEQ ID NO:5.
6. An isolated polynucleotide comprising a nucleotide sequence that is at least 65% identical to that of SEQ ID NO:7.
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7. An isolated polynucleotide comprising a nucleotide sequence that is at least 65% identical to that of SEQ ID NO:9.
8. The polynucleotide of claims 3-7 comprising a recombinant expression
25 system, wherein said expression system is capable of producing a LbpB polypeptide in a compatible host cell.
9. A host cell comprising the expression system of claim 8.
- 30 10. A process for producing a LbpB polypeptide comprising culturing the host of claim 9 under conditions sufficient for the production of said polypeptide and

recovering the polypeptide from the culture.

11. A process for producing a cell which produces a LbpB polypeptide thereof comprising transforming or transfecting a host cell with the expression system of claim 8
5 such that the host cell, under appropriate culture conditions, produces a LbpB polypeptide.

12. LbpB polypeptide from *Neisseria meningitidis*.

13. The polypeptide of claim 12 which is the polypeptide of SEQ ID NO:2, 4,
10 6, 8, or 10.

14. An isolated LbpB polypeptide comprising an amino acid sequence which is at least 65% identical to the amino acid sequence of SEQ ID NO:2 over its entire length.

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16. An isolated LbpB polypeptide comprising an amino acid sequence which is at least 65% identical to the amino acid sequence of SEQ ID NO:6 over its entire length.
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17. An isolated LbpB polypeptide comprising an amino acid sequence which is at least 65% identical to the amino acid sequence of SEQ ID NO:8 over its entire length.

18. An isolated LbpB polypeptide comprising an amino acid sequence which is
25 at least 65% identical to the amino acid sequence of SEQ ID NO:10 over its entire length.

19. The polypeptide of claims 14, 15, 16, 17, or 18 which comprises the amino acid sequence of SEQ ID NO:2, 4, 6, 8, or 10, respectively, from amino acid position 19 to the C-terminus of the polypeptide.
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20. An antibody immunospecific for the LbpB polypeptide of claims 14-19.

21. A method for identifying compounds which inhibit the LbpB polypeptide of claims 14-19 which comprises:

- 5 (a) contacting a candidate compound with cells which express the LbpB polypeptide; and
- (b) observing the binding, or inhibition of a functional response; or comparing the ability of the cells which were contacted with the candidate compounds with the same cells which were not contacted for LbpB polypeptide activity.

10 22. A vaccine comprising an effective amount of the polypeptide of claims 14-19 and a pharmaceutically acceptable carrier.

23. The vaccine according to claim 22 wherein said composition comprises at least one other *N. meningitidis* antigen.

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24. A method for vaccinating a human against neisserial disease comprising administering to said human a composition comprising an effective amount of the polypeptide of claims 14-19.

20 25. A method for vaccinating a human against neisserial disease comprising administering to said human a composition comprising an effective amount of the polynucleotide of claims 3-7.

26. The method according to claim 24, wherein said polypeptide is administered orally, subcutaneously, rectally, intratracheally, intramuscularly or intranasally.

27. The method according to claim 25, wherein said polynucleotide is administered subcutaneously, intratracheally, intramuscularly or intranasally.

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28. A method for diagnosing neisserial disease in a human comprising the

steps of incubating an antibody produced by administering to a suitable human or animal the polypeptide of claims 14-19 with a sample of biological fluids from a human to be diagnosed, wherein in the presence of neisserial bacteria an antigen-antibody complex is formed, and subsequently analysing said fluid sample for the presence of said complex.

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29. A therapeutic composition useful in treating humans with neisserial disease comprising at least one antibody directed against the polypeptide of claims 14-19 and a suitable pharmaceutical carrier.

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30. A kit for diagnosing infection with neisserial bacteria in a human comprising a polynucleotide of claims 3-7 or a polypeptide of claims 14-19 or an antibody of claim 20.